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WE have met under the auspices of Harvard University to recognize by formal ceremonies the entrance of a class of students in Dentistry upon the exercise of their profession. We give to this occasion the time-hallowed name of Commencement. Here ends the period of pupilage, here begins the life of applied knowledge and skill.

Commencement is not a word to conjure with as it was a century ago, when it paralyzed for the day the commerce of the neighboring town, and emptied all the villages in a circle of fifty miles of their black-coated and white-wigged clergymen. It is not the grand pageant as I remember it, when the Governor made his entrance to the Academic precincts, with a troop of horse and a cavalcade of white-frocked truckmen, when the common was covered with tents, as if an army had encamped upon it, and the trafficking and the revelries of Bartholomew's Fair were enacted on the provincial scale upon the green consecrated to the quiet pursuits of learning.

But this Commencement of the Dental School has a real significance, though it makes little show and does not appeal to any vulgar interest. It publishes the fact that a new pursuit has been assigned its place among those chosen professions which a fully organized educational Institution may fitly take in hand, and provide for teaching. And you may be assured that before our old University would take such a step, its governing Boards had satisfied themselves that the time was fully ripe for it. The Dental Profession had achieved its success and had won its place in the estimate of the intelligent public before its teachers were asked to share the labors and the dignities which belong to the Faculties of this great Institution.

The occasion must naturally bring together many who have no other special knowledge of Dentistry than such as they have gained while sitting in one of those magic chairs which fit alike the giant and the dwarf, which would accommodate the visitors of Procrustes and suit itself to all the transformations of Proteus. Were this an assemblage of dentists and dental students only, who would dare to open his mouth for speech before the members of a profession in whose presence kings are silent, at whose command eloquence is struck dumb, and even the irresistible and irrepressible voice of woman is hushed into a brief interval of repose? Even if this first fear were overcome, a speaker might well hesitate to address an audience of experts, who know all that he is like to tell them and a great deal more. But this hour does not belong only to our friends of the dental profession, and they can bear to listen to much that is familiar to them for the sake of their visitors, whose knowledge is limited to what they have acquired after the manner of poets, of whom Shelley says:—

> They learn in suffering what they teach in song.

A few generalities are all that can be attempted in a discourse like this; enough to give some little idea of what the dental profession has grown out of and what it has grown to; a few hints to make us feel more keenly its importance; a picture or two of old superstitions and fancies and barbarisms to contrast with the enlightened knowledge of our own time; a brief mention of some of the leading modern improvements in the scientific and practical departments relating to the teeth; an explanation of the causes which have kept the dental profession from receiving the recognition it has a right to claim, and a vindication of its title to the regard of the community and to a fair representation of its teachings at the great seats of learning. I mention some of the points I shall touch upon rather than

discuss, not under formal headings and with strict adhesion to the order in which I have mentioned them, but as they appear to present themselves most naturally.

The greatest difficulty in handling the subject is the extent of its literature, and the infinite detail of ingenuity which has gone to the bringing about of the perfection of its mechanical processes. The value of the teeth to human beings is so prodigious that so soon as attention was fairly turned to their proper management and the methods of repairing their losses, inventive talent precipitated itself, so to speak, upon the new department of human industry. There is no pearl in any royal crown for which a young queen would give one of her front incisors. And those who know what a perfect organ each one of the teeth is, as shown by the more recent revelations of minute anatomy; what pains nature has taken with its complex organization, will not wonder at the estimate set upon it.

The teeth, in their relation to the beauty of the human countenance, have figured in poetry from the earliest times. "Thy teeth are like a flock of sheep that are even shorn which came up from the washing: whereof every one bear twins and none is barren among them," says the imaginative author of the Song of Songs. Their whiteness has been compared to that of snow, of Parian marble and of pearls until verse is tired of the images. The ancient poets and satirists are full of allusions to the beauty and deformity depending on the conditions of the teeth. The ladies who made it their business to please, on Bentham's principle of procuring the greatest happiness of the greatest number, had recourse to every kind of artifice to disguise their defects and commend their charms. Here is one of these tricks as given by Athenæus, in a passage not cited by Duval in his large collection of classical quotations relating to this subject. I give a part of it in English.

"They whose teeth are elegant force themselves to smile even against their inclination, so that the beauty of their mouths may be seen by their visitors. But if their smile is not so pleasant a sight, they hold a sprig of myrtle in their mouths so that it will cover their teeth when they open their lips on purpose or otherwise."

As for the unfortunates whose teeth were discolored or had suffered some of the common changes that age brings about, the satirists scoffed at them in such coarse language that their phrases are quite unbearable to modern ears. Even such a personal remark as that of the graceful Catullus would be considered inadmissible in our time:—"Your mouth is full of teeth half a yard long and your gums are like an old wagon-box." The first circumstance—the seeming inordinate length of the teeth—is a well-known effect of age, which produces a shrinking of the gums. The Frenchmen talk of *dents dechaussées*, unshod teeth, and I remember that Thackeray, in one of his stories, speaks of certain ladies, not very young ones, as "long in the tooth," among other by no means flattering peculiarities.

We have grown more civil than the Romans, but we know the beauty of a fine set of teeth and the deformity of its opposite as well as they did. It is true that men can often conceal the imperfection of their dental arrangements by letting the eaves of a heavy moustache overshadow their mouths. But to women, to hide whose smile would be to take away half the sunshine of life, and to whom nature has kindly refused the growth that would deprive us of it, there is no element of her wondrous beauty that can take the place of white, even, well-shaped teeth. And as beauty is not a mere plaything, but a great force, like gravity or electricity, the art which keeps it, mends it and to some extent makes it, is of corresponding importance.

But we must add to this the consideration that speech is so largely dependent on the perfection of the teeth that our language, we might almost say, loses a letter with every tooth that falls. What can be more painful to witness than the effort of a hapless friend to bite his consonants out of the alphabet when he is reduced to the condition of the infant, whose boneless gums are unfit for any task but the caressing pressure of the maternal mouthful?

And then the humbler but still necessary function of mastication—how much depends on the ease and perfection with which this is performed! You can tell the state of a village by going to the mill. If it has enough to grind, and grinds it well and cheaply, you will find good farms and well-fed people. So if you see a good square jaw filled with good sound teeth, and moved by ten muscles that mean business and do it, you will find in all probability that they nourish a sound frame in man or woman. I have never forgotten the complaint of poor Walter Savage Landor—a sadder one than any of the Preacher's, it seems to me. I quote it from memory.—I have lost my mind, he said; that I do not care so much about, but I have lost my teeth, and I cannot eat.—It has been my custom for many years, when lecturing upon this part of

anatomy, to bring forward the skull of a large turtle, in order that its jaws might be compared with those of the human being in very advanced years. The sharpened edges of the alveolar border in the old man show the retrograde process by which he returns to the quasi-embryonic condition, reminding us of that earlier period when he passed through the scale of being upward, to reach the supremacy of which age is constantly trying to deprive him.

It is no wonder, then, that the teeth have been particular objects of attention from the earliest period. The Egyptians, who made specialties of everything, had professional dentists, and it is asserted that artificial teeth of ivory or wood, some of them on gold plates, have been found in the jaws of mummies. The teeth of mummies are said also to have been found filled with gold. I do not find any distinct notice of a dental profession from the time of the Egyptians to that of Galen. You will permit me to quote, in the original, a passage which I have unearthed in one of his treatises, because it makes use of an adjective which will be found in our catalogues and diplomas, where it was admitted after some discussion:—

Omnes tamen istos communi nomine medicos appellant, perinde ut eos, puto, qui a quibusdam membris, quorum præcipue curam gerunt, vocitantur: hos nanque ocularios, auricularios, DENTARIOS (ita dicere liceat) medicos nominant.

It is a long interval from Galen to the middle of the 17th century. But I have not found any other traces of a special dental profession until I came upon the following, which looks very much as if it referred to such specialists. In the Diary of the Reverend John Ward, Vicar of Stratford-on-Avon from 1648 to 1679—the book rendered famous by a reminiscence of Shakspeare, for which the poet would not have thanked him—is the following:—

"Uppon a signe about Fleet Bridg this is written

'Here lives Peter de la Roch and George Goslin, both which, and no other, are sworn operators to the King's teeth.'"

Whether these operators had any other calling than this august office does not appear. Early in the next century the practice of dentistry seems to have been in the hands of silversmiths and jewellers. I think many of us can recall the name of a fellow-citizen, originally, I think, a watchmaker, who branched off without any special training into the business of a dentist, and who acquired a considerable name for filling teeth with skill and success, taking time enough about it, and receiving very handsome pay for his services.

Dentistry as a profession may be safely said to have come into existence during the present century. In this country its growth has been of wonderful rapidity. One would have thought that Cadmus had sown a new furrow full of teeth and that they had sprung up dentists. In 1820, it has been computed that there were not more than a hundred dentists in the United States. In 1858 there were four thousand. I presume they have increased in as rapid a ratio since that time, and in the meanwhile works on Dentistry, journals devoted to it, institutions for teaching it, have become so numerous that it is recognized as one of the great callings of life.

If we would know what we have gained by the elevation of Dentistry into an honorable special calling, we must go back to the time when ignorance, superstition and bungling awkwardness reigned over the whole province of art, now so fully illuminated by science, and in which such admirable mechanical skill has developed itself in every form to relieve suffering, to supply deficiencies, to add in all possible ways to comfort and comeliness.

It is simply amusing to look back two or three centuries and see what men were capable of believing. You will find in Ambroise Paré various forms of words in use in his time to cure the toothache. The notion that this pain was caused by a worm, which Shakspeare refers to, is at least as old as Avicenna. Strange significance was attached to an anomaly which an old friend of mine told me happened in his own person, I mean the same fact that Richard the Third boasts of, namely, that he was born with teeth. A girl was born at Picenum, with six teeth, says Polydore Virgil; and at that time the Turks began to capture our towns far and wide. But nothing quite equals the story of the miller's little son, whose second molar on the left hand side of the lower jaw was a golden one, as good, they said, as if a goldsmith had made it. Some pretended having seen the letters C S C legibly inscribed upon it. I have before me a most exact statement of the facts of the case, authenticated by a number of eminently respectable personages. And I find in Haller's Bibliotheca Anatomica various notices of the storm of controversy excited by the story of this Silesian boy with the golden tooth. What it portends, says Laurence Scholtzius, I do not hesitate to declare is known to God alone. It is to

this most famous case that Sir Thomas Brown refers when he says, speaking of the pretended difference of posture in which drowned men and women float, "But hereof we cease to discourse, lest we undertake to afford a reason of the golden tooth, that is, to invent or assign a cause, when we remain unsatisfied or unassured of the event." And in the margin, "Of the cause whereof much dispute was made and at last proved an imposture." All this was a good while ago, but I am myself old enough to remember several curious notions about the teeth which had a considerable currency and came near enough to being believed to be told pretty seriously. If one had a tooth extracted, it must be burned, because if a dog got it and swallowed it one would have a dog's tooth come in its place. I recollect a story told me of a somewhat noted public character whose smile or other attractions had made him dangerous to the sex formerly called the weaker one, a personage too well known to the scandal of his time, who was said to have had his teeth, or some of them, extracted and replaced by those of a living animal—a calf or a sheep. This story was told seriously, and the hero of it I have seen with my own eyes, when age had disarmed him of the fatal fascinations of his earlier days. There is a common notion enough still prevalent that some persons have a complete set of double teeth, as they are called; a jaw full of molars. I never saw one, and I doubt if anybody ever did; but the teeth of Indians and sailors, ground down by the attrition of hard grains or sea-biscuit, might be mistaken for such a malformation.

It is only since the year 1835 that the anatomy of the teeth, out of which necessarily arose new views of their physiology and pathology, can be said to have been fairly understood. It is true that old Leeuwenhoeck had described the "pipes," as he called them, of the dentine so long ago as the year 1678, but his discoveries were so much ahead of his time that they had to wait some generations, like the seven sleepers, before they woke up, to find themselves confirmed. An article in the *British and Foreign Medical Review* for the year 1839 brought before the profession in England and America, in a connected way and with illustrative figures, a series of discoveries which had changed the whole aspect of dental anatomy. We owe all these discoveries or re-discoveries to the invention of the achromatic microscope, which enables any of us to show the student the beautiful intricate structure of the teeth as plainly as he can see the anatomy of the skeleton with the naked eye. You have all studied the exquisite tubular arrangement of the dentine, have speculated on the nature of the contents of the tubes, first demonstrated by Owen in the elephant, have examined the prisms of enamel, and the stellate cells of the cementum; you have seen the vascular systems of the pulp and around the fang and how they run into each other; the tooth is for you a delicately organized, living structure, carrying on nutritive functions through the greater portion of its substance, and capable to a certain extent of repairing its injuries. To those who studied Bell's or Meckel's Anatomy, who read the works of Hunter or Fox on the teeth, all this is a revelation, which only those can fully appreciate who were born in the benighted days of dental heathenism.

While the scientific basis of dental art has made these great advances in modern days, the practice of the art itself has undergone the most wonderful transformation. The work of filling teeth has been carried to such perfection that not only is decay arrested and a tooth which seemed destined to rapid destruction so repaired that it will last a life-time, but where the greater portion of a tooth was gone, it has been built up, so that the miracle of the boy of Silesia is wrought every day by mortal hands, and we see a golden tooth in a living mouth without fearing an invasion of the Turks, or a war with England. I suppose that the improvements in this particular department of dentistry, the invention and perfecting of mineral teeth, their insertion on plates retained by atmospheric pressure, the substitution of the improved forceps for the clavis, and the application of anæsthesia to extraction, would be considered the greatest achievements of modern dentistry.

What a change since the time when teeth were allowed to decay as if they were not worth the gold it took to fill them! What a change from the time of those ghastly *rateliers*, as the French call them, carved in ivory and supported by springs that creaked with every motion of the jaws like the thoroughbraces of an old-fashioned stage-coach! Could anything be less inviting to social intercourse, could anything be more appalling to tender infancy than the sight of one of those dancing sets of artificial teeth, looking as if they were ready to jump from their owners' mouths and fasten upon one as they used to say a turtle's head would do after it was cut off? Mr. Greenwood, of New York, you may remem-

ber, carved a set for the Father of his Country, and one can hardly fail to see how the flattened and compressed lips were in a perpetual struggle with those loose-fitting arches and rebellious spirals. Yet this was considered a master-piece of dental workmanship, and I have no doubt that pilgrimages have been made to Mount Vernon by artificers in that line of business who left with a tear in one eye at the sight of Washington's majestic countenance, and a twinkle of satisfaction in the other at the triumph achieved by Mr. Greenwood.

Contrast this state of things with the manufacture of artificial mineral teeth as carried on in this country, where it has been brought to its greatest perfection. More than ten years ago, there were nine factories engaged in their fabrication and more than two million teeth were made in a year. To-day I suppose they must be made and sold by the bushel like the cereal grains, and if the great factories required elevators to handle their products it would hardly surprise us. Compare the delicately tinted, exquisitely shaped porcelain incisors with those frightful ivory palisades that used to play up and down like a portcullis in a manner to terrify all beholders. In fact, the perfection of artificial teeth is carried almost too far. They have come to be for the inside of the head what the wig was for its outside in the days of our ancestors. It was so much more convenient to have a head of hair that one could whisk on and off in a moment, one that never grew gray, one that was just the shade the owner fancied, that was always in curl, that could be laid aside in hot weather to let the cool breeze play over the naked scalp, a luxury which Adam never knew in Paradise, and coming about as near to "sitting in one's bones" as is practicable while we are in the flesh; all this was so much more convenient and comfortable than the arrangement provided by nature, that the wig reigned undisputed for generations, and will, not very improbably, return to bless mankind before our children's children are bald and gray. So with the artificial teeth of this dental millennium in which it is our good fortune to live. They are comely, they never ache, they are contented with their situation and keep their place, which is more than we can say of most of our living servants; they undergo no changes in the mouth, they admit of the nicest personal proprieties, they serve perfectly for articulation, and, though one can hardly crack a peach-stone with them, as some can with their native molars, or use them for biting off the heads of iron nails, as used to be told of Ethan Allen, they can do good service in the respectable and responsible duties of mastication. The consequence of all this is that people are only too ready to have their natural teeth shelled from their gums like so many grains of Indian corn from the cob, and a complete mouthful of artificial make inserted in their place. You miss your friend for a little time—he is in his chamber with his jaws tied up, perusing Zimmermann on Solitude for a few days—suffering from toothache is the figurative language in which his condition is announced. When he returns to society he has recovered his youth, like Æson in the hands of Medea, and his smile is a glittering welcome, a mineral benediction which it is a joy forever to have been blest with. Think again what that preliminary process of edentation would have been in the days when the rustic patient complained that he had to pay as much as his neighbor who had been dragged three times round the room before the tooth came out. There never was a claw on bird or beast that was the cause of such anguish of apprehension, such howls of agony as that diabolical instrument, looking like a vulture's talon, but known by the name of *the key*. It was a key indeed; it may have opened the door of heaven to the sufferer in due time, but while the bolt was turning the victim thought he was in that other place, where the man must be who invented the instrument of torture. *Now*, a patient comes in, takes a few whiffs of an anæsthetic, has a dozen or more teeth submitted to the embrace of the gentlemanly forceps, which lift them from their sockets as one takes out the pegs of a solitaire-board; say rather, as a father lifts his first-born infant; comes to; stares about him: asks when they are going to begin; is told that it is all over; bursts into tears of hysteric gratitude, kisses the smiling dentist, wants to hug all mankind and make the human race happy at once, sobers down presently, ties up his face, and takes to retirement and Zimmermann for a season, as before mentioned.

I have seen something, as probably most of us have, of the practical skill of dentists. But in alluding to some of the more important recent advances of the dental profession, I was unwilling to trust my own fortunately limited experience, and have consulted my friends Dr. Moffatt, of this city, and Dr. McQuillen, of Philadelphia, the late Editor of the journal known as the *Dental Cosmos*, both of whom have kindly

favored me with their own independent opinions as to late improvements.

The use of the mallet in filling teeth, every blow of which instrument is a fractional knock on the head to the patient equal to about one hundredth of that which a slayer of cattle gives to a full grown ox to finish him, but which being taken in divided doses allows the sufferer to escape with life—the use of the mallet, automatic or other, far from agreeable as it is, is considered a vast accession to the art of dentistry. Every man must be anvil or sledge, says Goethe, and it is quite plain that our friends the dentists have settled it so far as they and we are concerned.

Nothing has excited my admiration more than the wonderful drills moved by the foot or any other power which may be preferred, finding their way into every corner of the mouth with a sinuous grace of movement such as the serpent displayed for the fascination of our unfortunate first parent, and making their way into the solid dental substance with a rapidity from which the engineers of the Hoosac tunnel might borrow a most significant lesson.

The employment of sponge gold for certain purposes, and the use of heat to develop the cohesive properties of the metal, have enabled the dentist to perform those remarkable feats of building up a tooth from its ruins to which I have before referred.

The public seems hardly to appreciate the very great value of the cement fillings; both the oxide of zinc and the gutta percha, either of which is capable of preserving for long use a tooth too infirm to bear filling with gold.

The use of sheet India rubber to protect a tooth from moisture while being filled, is another most valuable innovation.

I learn that even exposed pulps may be protected by artificial means, and thus a tooth saved as a living organ from an almost hopeless condition.

Important as are these mechanical inventions, the growth of dental associations, educational institutions and journals, mark a still more general advance of the profession. I have known something of the teachers of the art, of their zeal, their capacity, their disinterested desire for the elevation of their calling. I have for years been a frequent reader of the *Dental Cosmos*, and I can bear testimony to the great intelligence with which it has been edited. I have found in its pages much information of interest and value that I have never met with elsewhere, and I have seen a great many medical journals with a broader title-page and a vastly narrower table of contents. Yet this is but one of five dental journals published in the United States, and at least as many are published in other countries. It is from a living and wide-awake profession, then, that the new Faculty is invited to share with us the honorable task of teaching, and we cannot doubt that the community will encourage, and it may be hoped in due time liberally endow the infant offspring of Harvard University, now cutting its first teeth with every promise of health and vigor.

The picture of old age drawn in Ecclesiastes is wonderfully impressive, all the more so in consequence of the obscurity of some of its images. But we all know what the Preacher means when he speaks of the drawing nigh of the years when we shall say there is no pleasure in them, and of the day when the grinders shall cease because they are few, and those that look out of the window shall be darkened. There were no dentists in those days to rejuvenate the old man with a third dentition. There were no opticians to supply his failing vision with the second eyes of old age. The aged people seem to have been in a most forlorn condition at a time when the men of to-day not rarely have a good deal of vitality left and enjoy life and help to make others enjoy it. To us who remember the late Josiah Quincy and Dr. James Jackson long after they were eighty years old, who knew something by report of Lord Lyndhurst and Lord Brougham in their later years, it seems strange to hear Barzillai say to King David "I am this day fourscore years old: and can I discern between good and evil? can thy servant taste what I eat or what I drink? can I hear the voice of singing men and singing women?"

But what would old age be to a great number of persons without the aid of the dentist and the optician? The worn-out laboring man, unused to books and with limited capacity for social intercourse, may get along well enough perhaps with his pipe and his seat in the sunshine or by the fireside. Father Abraham may not have felt the need of spectacles; he went to bed early, no doubt; there was no daily newspaper to read, and he did not shave. But what would become of the scholar, or of persons of any cultivation in our days who at fifty or sixty should find themselves cut off from reading, and not improbably rendered unpresentable, or at least miserably uncomfortable, in society in consequence of imperfect articulation? The care of the eyes is therefore recognized as one of the

most important specialties in medicine, and the study of ophthalmology has engaged some of the most distinguished professional talent in this country as well as in Europe. The province of dentistry is only second in importance to the other domain of medical science and art, and rivals it in the intelligence and activity of those who teach and practise it. In one respect it is of greater public interest than the other branch; most children's and young persons' teeth require positive attention, whereas their eyes in the great majority of cases take tolerable care of themselves. I think there are twelve times as many dentists in this city as there are oculists. If every one had twenty eyes in the early part of his life and thirty-two when full grown, the numbers of oculists and dentists might be more nearly equal.

The branch of the medical profession to which this graduating class has devoted itself has not taken its proper position until within a comparatively recent period. But in this respect it has been no worse off than other branches in former times, or than the entire profession at some periods of its history. The Romans contrived to live without doctors for some five hundred years. When they got them at last they were slaves, Greeks for the most part, and kept as appendages of a great man's establishment, as he kept a cook or other servant.

The worthy Vicar of Stratford-on-Avon, to whom I have before referred, gives us some very curious information as to the state of the medical profession in England in his own time and before it. A few paragraphs are worth quoting:—

"The Saxons had their blood-letters, but under the Normans physick begunne in England; 300 years agoe it was not a distinct profession by itself, but practisd by men in orders, witness Nicholas de Ternham, the chief English physitian and Bishop of Durham; Hugh of Evesham, a physician and cardinal; Grysant physician and pope; John Chambers Doctor of Physick, was the first Bishop of Peterborough; Paul Bush, a bachelor of divinitie in Oxford was well read in physick as well as divinitie, hee was the first Bishop of Bristol." "In King Richard the Second's time physitians and divines were not distinct professions; for one Tydeman, Bishop of Landaph and Worcester, was physician to King Richard the Second." And again, "Edmund, Earl of Derby, who dyed in Queen Elizabeth's days, was famous for chirurgerie, bonesetting and hospitalitie."

We may be sure that all this meant a very low condition of medical knowledge. And this opinion is confirmed by what is found in the same diary, a few pages farther on.

"Dr. Sydenham is writing a book which will bring physicians about his ears, to decrie the usefulness of natural philosophie, and to maintaine the necessitie of knowledg in anatomie in subordination to physick.

"Physick, says Sydenham, is not to be learned by going to Universities, but hee is for taking apprentices; and says one had as good send a man to Oxford to learn shoemaking as practising physick."

There were other heretics besides Sydenham, for, as Mr. Ward tell us, "Some have said that physick is no art at all, nor worthy of the name of a liberall science, as Peter And. Canonherius, a practitioner at Rome, endeavored to prove by sixteen arguments."

The Vicar himself practised physic as well as preached, like others of his clerical brethren. We find from him that quarrelling and quackery were quite as common then as now. The university teaching which Sydenham spoke of with such contempt was of course the book-learning of the time, and not the practical instruction of later days. Much as we have gained, the following words from the diary are not so far from truth to-day as they might be.

"There are several sorts of physitians, said one; first, those that canne talk but doe nothing; secondly, some that can doe but not talk; third, some that can both doe and talk; fourthly, some that can neither doe nor talk, and these get most monie.

"Some doctors have a noble out of a pound of their apothecaries; as Dr. Wright; many (have) a crowne, as an apothecarie in London told me."

In this last sentence, and in the fact that the English "general practitioner," so called, has charged, not for his advice, but for his pills and potions, lies the secret of that disgraceful drugging system which has racked the entrails of Englishmen from generation to generation, which we inherited from the mother country, and which is fast giving way to those more rational views in which healthy nutrition and the skilful alleviation of symptoms are taking the place of the exhausting depletions and specific poisons supposed necessary to the cure of disease. In spite of this corrupting influence, English medical science and art asserted themselves successively in men like Linacre, Harvey, Sydenham and Mead, and the practitioners who confined themselves to medical, in distinction from surgi-

cal practice, so as to deserve the eulogies of such personages as Dryden and Pope, of Johnson and Parr and Blackstone.

But chirurgery—medical hand-work—fared very differently. No longer ago than when President Holyoke, whose son, the venerable physician, some of us well remember, entered upon the duties of his office, and for years after that time, the London Company of Barber-Surgeons were holding their meetings at their hall in Monkwell street, and it was not till very near the middle of the last century that the surgeons were incorporated as a separate body. It was about the same time, that is, during the reign of George the Second, that the question was discussed in open court before the Chief Justice of England, whether a surgeon was an "inferior tradesman," within the meaning of a certain statute of William and Mary. But we must remember in what contempt other of the most useful occupations were held so long as Society was enslaved by its feudal traditions. Traffic and agriculture were scorned by the descendants of the Norman robbers until they were starved into better views and more civil language than they had inherited.

The toiling tradesman and the sweating clown
Would have his wench fair, though his bread be brown—

says Michael Drayton, in the poetical epistle of Edward Fourth to Mistress Jane Shore. And now the great nobles of Britain are very glad to turn an honest penny by traffic instead of taking it by force from their neighbors.

Lord Stafford mines for coal and salt,
The Duke of Norfolk deals in malt,
The Douglas in red herring;

one son of the Duke of Argyle marries the Queen's daughter, and the other comes to New York and goes into a trading establishment. In this country, more especially, the useful arts have no right to complain of their want of fair recognition. If we do not absolutely forbid idleness, our rich men and women who live for amusement only are very apt to find themselves uncomfortable until they can get out of a country where there are bounties granted to fishermen and nothing but taxes for gentlemen of leisure.

The movement of civilization is a perpetual struggle between the arts of destruction on the one hand and those of construction and conservation on the other. All that the earth teaches us of man in the earlier periods of his ascertained existence shows him to have been a fighting cannibal, who cracked the bones of his deceased relatives with the same pious satisfaction his descendant shows in breaking the seal of a last will and testament. The best man among savages is the one who swings the heaviest club and has eaten the largest number of his enemies, or who carries most scalps at his girdle. It is somewhat better in our day, but the ideal state of society is not yet made quite real. The fighting man is still the one most honored by the world. Even the phraseology of our religion, which points to the Lord of Hosts and the Captain of our Salvation, shows us how deeply rooted is that feeling of the supreme excellence of a military title, which we inherit from the man-eating troglodytes.

But the modern movement, in its truest form, insists that mutual destruction is not the chief end of man. Even the fighting Romans had got so far as to decree that the oak-leaf garland "ob cives servatos" should take precedence of the conqueror's laurel. And Christian civilization is ready to acknowledge to-day that the only really noble warfare is that against the evils which beset the race. Men must be slain, for a long time, always, perhaps, in the greater conflicts of right and wrong, but humanity confesses that, apart from the righteous end to be attained, a bloody victory is only a less calamity than a bloody defeat.

The arts of peace are gaining in consideration over the arts of war, slowly, we must own, but steadily. And if any one of these arts of peace should have appeared entitled to the highest consideration of a civilized people, it would seem to be that which professes to relieve suffering and prolong life. So it would have been if Medicine could have done all that was asked of it. The physician would have been held only second to the Deity had he not too frequently disappointed the expectations of those who were ready to worship him. This always was and always will be. The Children of Israel complained that they had to make bricks without straw; the physician has to make bricks without clay. Many of the patients that come to him had never any physiological right to live at all; they are not much nearer to the true human pattern than that same starved Justice Shallow, who was like a man made after supper of a cheese-paring; when he was naked for all the world like a forked radish; and they come complaining that they are not in condition to run ten miles within the hour, or fight the champion of the heavy weights for the prize belt. It has taken a dozen sickly generations to breed them down to constitutional invalidism, and they

want a pill or a powder to set them all right again. Or they come to the physician at fifty or sixty, wrecks of fine constitutions, got up originally without regard to expense, but burned out with strong drink and browned to the marrow with narcotics and nicotics, and want back the virginity of their sodden and corrugated tissues. Or it may be some desperate and violent malady has stabbed them to the death, and because no one has seen a hand with a poniard in it, the patients, or their friends, think that some drop or potion will undo the mortal effect of the invisible dagger-stroke.

These inevitable disappointments have kept the medical profession from receiving that degree of confidence and of honor to which its noble function seemed to entitle it. It does its best, but that is not enough for the eager demand of men for health and length of days. Hence the great number of pretenders and pretentious systems which profess to be able to meet this want. Men, and still more women wish to be deceived, and it becomes a lucrative trade to promise cures as it was to promise gold in the days of the Alchimists.

Spondent quas non exhibent divitias, pauperes Alchimistæ.

In spite of all the obstacles which meet those who give their lives to the pursuit of knowledge without regard to the prejudices it disturbs, Science was never honored as it is in our time. And the science of life was never studied as at the present day; never with such an apparatus of research, never with such concentration of talent on special investigations, never with such hope of resolving the most difficult problems within the reach of human faculties. Of the science of life medicine is a great and profoundly interesting branch, considered merely as a study. But having regard to the interests it deals with, life and death, well-being and misery, the conditions of mind and body, the happiness or wretchedness of whole communities, we can hardly wonder that in early ages a divine origin was assigned to it, and that He who is called the Lord of Hosts is also spoken of by the nobler title of the Healer of the land and of the people.

Your profession, young gentlemen, is now an accepted province of this great and beneficent calling. It has shared the effects of that onward movement which has asserted for the arts of peace the dignified position to which they are entitled. You are bound to reflect back honor on the Institution which has invested you with authority to go forth as its representatives in the domain of your special duties. The diploma you have received is a certificate of your fitness for these duties, but it implies a promise that you will try to do credit to those who stand sponsors for you as you are christened with your new title. Harvard University has done all it could do to recognize the value of your profession to the community. And it does this at the time when it is making the most strenuous efforts to place medical education on a basis worthy of a branch of knowledge so complex, so vast, so all important to mankind. That open volume with *Veritas* inscribed upon it should be, and it is carried at the figure-head of the argosy of our American intellectual progress. Our University always was and must be a leader in educational movements. She is waiting for those to follow that dare, to pass her that can, and if any drop astern, she must wave them a courteous salute and leave them.

And now, gentlemen, we bid you Godspeed as you leave these halls to exercise the talents which have been here trained, and apply the knowledge which has been here imparted to you. May you find the public ready to appreciate and reward your skill, and so acquit yourselves that the ear which hears you shall bless you, and the eye that sees you bear witness to you; that the smiles of innumerable friends may reveal to you the perfection of your own handiwork, and your praise be in all the mouths of a grateful community!

A NEW AND UNIFORM METHOD OF RECORDING THE HEARING POWER IN OTOLOGICAL PRACTICE.

By J. S. Prout, M.D., Surgeon to the Brooklyn Eye and Ear Hospital, &c. &c., Brooklyn, N. Y.

In otological practice we constantly feel the necessity for a reliable test for the hearing. For want of anything better we use the ticking of a watch, the voice spoken and whispered, tuning forks, &c. &c. The accuracy with which we measure the visual power by Snellen's test-types, and record the results obtained, cannot be arrived at by means of any of the usual sound makers (sonofactors), nor will it be until an instrument can be made which shall *always* produce uniform tones. These tones must be arbitrarily assented to as relatively, not absolutely, correct, just as the visual angle of five minutes, on which Snellen forms his test-types, is arbitrarily chosen, and "does

not afford us an absolute but only a relative value." For this reason the attempt to invent a perfect sonofactor for testing the hearing power should be encouraged. In the mean time the sources of sound already mentioned must continue to be used in recording our observations.

A short formula for expressing the results thus obtained has long seemed to me to be necessary—something approaching the brevity of that used for recording the vision. This is based on the fact that the visual power is expressed by a fraction the numerator of which is the utmost distance at which the types are recognized (d), and the denominator the distance at which they appear at an angle of 5 minutes (D), thus giving the formula $V = \frac{d}{D}$. I hold it to be a mistake ever to reduce this fraction to lower terms. If not so reduced, $V = \frac{1}{1}$, or $V = \frac{1}{10}$, or $V = \frac{2}{20}$, means that type No. 1, No. 10, or No. 20, was read at one, ten or twenty feet, and expresses by its own terms, without any *conventional understanding*, just what test was used. In ordinary usage, the formula V = 1 is intended to express the fact that type No. 20 was read at twenty feet, but it is more simple and straightforward to say in such a case $V = \frac{20}{20}$, and it is *very little more trouble*.

To return to the hearing: for nearly three years I have recorded the hearing power as a fraction, the numerator of which is the distance at which the particular sound is heard, the denominator the distance at which it should be heard by an ear of good average hearing power. This denominator must vary according to the sonofactor used, and should generally be expressed in inches.

For still further simplification, and that the method may be adapted to international use, I suggest the following abbreviations: A. D., auris dextra, instead of right ear or R. E.; A. S., auris sinistra; P. A., P. aud., potentia auditûs, hearing power; V., vox, the spoken voice; V. S., vox susurrata, whispered voice—or simply S., susurrus, a whisper; H., horologium, the watch.

If this system should become general, then the formula P A, A D, H, $= \frac{12}{36}$, would to all otologists represent the fact that a watch that should be heard at 36 inches was heard by the right ear of the patient at a distance of 12 inches; the formula P A, A S, V S, $= \frac{6}{36}$, would mean that the whispered voice was heard by the left ear at 6 inches that should have been heard at 36 inches. It is not necessary to multiply examples.

By referring to the records of the Brooklyn Eye and Ear Hospital, I find that I commenced to record the hearing power for my watch as a fraction on the 15th of May, 1869. Its use by my colleagues and myself has been continued since then. On the 21st of September of the same year, I read a paper on the importance of early treatment of the diseases of the ear before the Medical Society of King's County, in which the use of this fractional method was explained and advocated.

THE POSSIBILITY OF THE DIAGNOSIS OF SYPHILIS BY MEANS OF THE MICROSCOPIC EXAMINATION OF THE BLOOD.

By Dr. Lostorfer, of Vienna. Translated from the Wiener Med. Presse by James R. Chadwick, M.D.

The general interest which has greeted the matter induces me to give here an abridgement of an article destined for publication elsewhere.

In the examination of the blood from syphilitic patients, I employed the following method. A drop of blood of a syphilitic, upon a slide covered with covering-glass, was placed in a moist chamber for preservation, and was daily searched with a Hartnack ocular 3, objective 10 à immersion.

The result of these examinations, which I have prosecuted without interruption upon numerous specimens of blood from individuals presenting the most diversified forms of syphilitic symptoms, and which proved to be constant in almost every case, was as follows:—

On the third, fourth or fifth day, and exceptionally after twenty-four hours, small, shining corpuscles were observed between the blood corpuscles, a part in a condition of rest, and a part in oscillatory motion. In the following days, these bodies increased in size, so that between the fourth and sixth days they had attained the dimensions of the red blood corpuscles. Most of them were ball-shaped, others irregular, many had one sprout, others several; of these sprouts a part were connected with the corpuscle by a pedicle, and a part not. On certain sprouts one or more secondary sprouts were noticed. After the sixth or eighth day, a "vacuole" formed in the corpuscles which increased in size until it was enclosed in a thin layer, as shown by its double contour. On the addition of distilled water after the vacuoles had formed, consequently after the sixth day, an increase of the vacuoles in the corpuscles, a

formation of the same in the sprouts, as, also, in several cases, of long excrescences, similar to the tubular buds (Keimschläuchen) of fungi took place. No further development have I observed, even after six weeks' examination.

The number of these corpuscles varied from 1—50 in the field of vision. At the same time, as well as for months previous to the examination of the blood of syphilitics, I searched specimens of blood from healthy persons in the same way, and in no case found the described corpuscles. Equally without result was the examination of blood from individuals suffering from typhoid fever, lupus, gonorrhœa, diphtheritic ulcers, one with eczema capitis, and one with leprosy. The appearance of these corpuscles, therefore, seems to be peculiar to syphilitic blood, wherefore I have given them the name of syphilis corpuscles. That this peculiarity of syphilitic blood provides us with the possibility of a diagnosis of syphilis I have proved, thanks to the voluntary assistance of Professors Stricker and Hebra. These two gentlemen laid before me—the former five times and the latter twice—a number of specimens of blood, which had been taken partly from healthy, and partly from syphilitic individuals, and numbered; between the third and sixth days, I brought to their knowledge the result of my examinations, with the exception of one experimental series, where the result was negative, and of a specimen here and there, which was designated as useless and set aside. In perfect correspondence with the record, I indicated the blood of syphilitic patients as syphilitic, and that of healthy persons as healthy blood.

Considering that, at these examinations, more than fifty specimens of blood came under observation, and that from these I selected about twenty as diseased, full credence can hardly be refused to this result, which I make known in accord with Professors Stricker and Hebra.

From the clinical histories of the cases examined with positive results, it is evident that the presence of the syphilis corpuscles is not connected with any particular form of syphilis, but is found in the most varied forms. As extreme points I can mention the induration when three or four weeks old, before the appearance of an exanthema, on the one hand, the node in company with cutaneous ulcers, where disease had lasted six years on the other.

As to the source whence the syphilis corpuscles proceed, and the role which is allotted them, the present examinations have given no clew. The solution of these and many dependent problems must be deferred to future examinations.

Bibliographical Notices.

Sudden Death soon after Parturition. By Thomas More Madden, M.D., M.R.I.A., Dublin, Senior Assistant Physician of the Rotunda Lying-in Hospital. Re-printed from the *American Journal of Obstetrics.*

After premising that this is a very shocking accident, and that he has seen several instances of it, the history of which he proposes to narrate, the author proceeds, before reciting them, to devote three pages (his whole article covers less than ten) to a disquisition on embolism, in which the distinction drawn by Dr. Playfair between embolism and thrombosis, and the opinions of Dr. Meigs on heart-clot, occupy generous space. Following this introduction, we might expect cases illustrating sudden death from this particular cause, but we are disappointed. Dr. Madden remarks that he shall merely narrate the particulars of some instances of sudden death soon after labor, adding that the cause, in two of the cases, is not, so far as he is aware, mentioned by any other writer on the general subject, viz., one from sloughing of the cervix uteri, the other from rupture of a varicocele of the left ovarian vein. His cases are five in number; but his promise of giving the particulars of them is so meagrely fulfilled that we are able to determine the diagnosis by conjecture only. Indeed, we approach certainty only by assuming that the conclusions are not justified by the evidence presented, and are, in fact, improbable.

The first case is not one of sudden death at all; the patient succumbed four days after delivery, from sloughing of the cervix and vagina, and from peritonitis. It would seem that the diagnosis might have been easily reached independently of the autopsy which followed.

The second case is that of a woman with contracted pelvis, whose labor had been induced by the uterine douche at about the end of the eighth month, and who was then delivered by forceps. The placenta was expelled naturally, and there was no hæmorrhage, and she was apparently doing well on the morning of her delivery. At 5, P.M., however, her pulse was hardly perceptible, and she was cold and despond-

ing. Stimulants and nourishment were freely administered during the day and night. She slept till 4, A.M., next day, and then appeared tolerably well. At 7, A.M., she sat up, passed water, and took some warm whey. A few moments afterwards, while talking to the nurse, she changed countenance, sank back, hiccough ed once or twice, and expired almost immediately. Within an hour after death, while the corpse was still warm, the body became covered with black ecchymosed patches, and the abdomen enormously distended. This is the whole account of the case, and the author adds his opinion that there can be no reasonable doubt that this was an instance of sudden death arising from the entrance of air into the uterine sinuses. On the contrary, we think that so unsatisfactory a history, with no autopsy, can leave no impression on the mind *but* doubt, with rather a leaning towards the theory that some profound systemic change, perhaps blood-poisoning, suddenly paralyzed the cardiac ganglia or nerve centres, and produced fatal syncope. The remarkable changes in the state of the body after death would support this view; while nothing in the account given points to the admission of air into the circulation as the cause of death. Even if an autopsy had been made, and the heart and vessels found to contain gases, we should presume that these had been generated in the blood itself, either before or after death, as a result of one of those exceptional forms of rapid decomposition which sometimes attends blood-poisoning. A careful collection and analysis of such gases, resulting in the discovery that they consisted of atmospheric air, would alone suffice to overthrow our presumption and establish that of our writer. We fear that he would think such measures superfluous, and would rather rely on guess or intuition as a basis for his conclusions.

The outline of the third case points strongly towards syncope from depressed nerve power, the consequence, probably, of blood-poisoning, as the cause of the fatal issue. Dr. Madden is in doubt whether to assign it to embolism of the pulmonary artery or fatal syncope; but very wisely assigns the greater probability to the latter supposition. The patient had been suffering from diphtheria for three weeks previous to her labor, which was very easy; and during the twenty-six hours which she survived after delivery, she had shown such decided signs of prostration as to render her physician uneasy, and decide him to ply beef-tea and stimulants freely. Having taken some beef-tea, and talked cheerfully with the nurse, she suddenly sat up in bed, gasped for breath, and sank back dead. The history of this case is chiefly remarkable, aside from its omission of important details, for the author's singular balancing of opinion between syncope, and asphyxia from pulmonary embolism, a doubt which it would seem could scarcely arise upon the most cursory observation of symptoms.

The fourth case was that of a desponding primipara, delivered with forceps after a labor of twenty-five hours. About thirty-eight hours later, she was found dead in her bed. She had had slight diarrhœa and vomiting the afternoon following delivery; at a later hour, she seemed better. Her abdomen was then soft, and the lochia natural. There was no *post mortem*, and from the facts given, it would be difficult, if not wholly impracticable, to form an opinion as to the cause of death. The author believes it a case of fatal syncope, or sudden paralysis of the heart.

The fifth and last case of the series was one of collapse following delivery, an adherent placenta having been removed under chloroform. It terminated fatally in eight or nine hours. A *post-mortem* examination discovered sero-sanguineous fluid in the peritoneal cavity, and a minute aperture in an enormously-dilated, varicose, ovarian vein. No other lesions were found. This case appears to be unique, and worthy of record.

A paper like this which we have analyzed, might well pass unnoticed if the material were drawn from the private practice of an obscure physician, and published in some provincial journal of medicine; but here is a series of cases observed (heaven save the mark!) in the wards of an extensive Lying-in Hospital in a great European medical centre, read before a Scientific Society of Dublin, and transmitted, as an original communication, to a New York Quarterly, where it is accorded the post of honor.

When so much worthless trash, in the garb of papers on professional subjects, is admitted to journals devoted to the progress of medical science, we believe our inhospitality is pardonable if we fail to give a cordial welcome here to lame, halt and blind productions from across the water. We are already overburdened by the pauper class of our own medical miscellany.

We know, to the credit of our medical press, that much that is characterized by close observation, experiment and research,

careful and conscientious deduction, and thoughtful conclusion, finds its way to its columns. Let us encourage the preponderance of such contributions, and cordially recognize worth even in the report of a single well digested case; nor let us spare an occasional thrust at incompetence or carelessness, when these become more than usually conspicuous, to the end that both editors and contributors may realize that American Medical Science is as strict and conscientious in its methods, if not as patient and persistent in its searchings, as that of any nation of the Old World. G.

Neuralgia and the Diseases that resemble it. By Francis E. Anstie, M.D. New York: Appleton & Co. 1872. Pp. 362.

This very instructive work, from the pen of one so thoroughly original as Dr. Anstie, cannot but receive general commendation. The subject itself is of such a vexatious nature that any attempt to enlighten the profession concerning its pathology and treatment will be gladly welcomed, and more especially so when the attempt is made by one of such acknowledged ability as the present author. The work has been for some time anticipated, and its character was in a measure foreshadowed by Dr. Anstie's contribution on the same subject to Reynolds's "System of Medicine."

After some general considerations on the subject of pain as the most prominent feature of the various maladies grouped as neuralgic, wherein, among other topics, a distinction is made between pain and hyperæsthesia (the former being a *lowering* of true function, due to a perturbation of nerve-force) the author passes to a discussion of neuralgia in its clinical history, its complications, its pathology and etiology, its diagnosis and prognosis and its treatment. In the study of the pathology and etiology of the disease, the proposition is laid down that neuralgia has its essential seat in the "posterior root of the spinal nerve in which the pain is felt," the change in the nerve-tissue being an atrophic one; an hypothesis which is certainly original, and, at first view, well chosen. Whether future pathological and microscopical investigations in this direction will confirm this theory the author himself leaves an open question, but prefers to rest his case on clinical evidence. Among the interesting points in this connection will be found the views concerning hereditary transmissibility of neuralgia, and the agency of cold as a causative influence.

The chapter on the complications of neuralgia is very instructive. Vaso-motor paralysis, changes in nutrition (as in the turning of hair to grayness, alteration in the mucous tissues, &c.), the occurrence of herpes zoster, inflammatory affections of the eye, muscular paralysis, impairment of sensation and of secretion are in turn discussed.

In the study of a disease which has always been to a great degree an *opprobrium medicinæ*, the author finds it a difficult task to suggest anything new or satisfactory in the matter of treatment. A generously ordered diet, he deems of prime importance. The medicinal treatment, both local and constitutional, embraces remedies with which the profession are pretty generally acquainted, but many admirable points in therapeutic application are shown forth. We may say, in passing, that the author has a right to speak as one having authority in the treatment of neuralgia, having himself been for many years a victim of its torment.

Among the diseases that resemble neuralgia, Dr. Anstie discusses spinal irritation, the pains of hypochondriasis, alcoholism, syphilis, colic and dyspeptic headache.

We cannot assert that the original ideas contained in this manual will so far meet the approval of the profession as to become authoritative, but we venture the opinion that few medical readers will peruse the book without obtaining a great amount of information, presented, withal, in a very readable shape. As a systematic treatise, the work was much needed, and the profession is under obligation for labor so well performed.

An Introduction to Pathology and Morbid Anatomy. By T. Henry Green, M.D., M.R.C.P.L., &c. Philadelphia: 1871. Pp. 260.

If it were well to read a small and an elementary work on a subject which can only be treated fully and completely to be, in any degree, understood, which requires the most thorough discussion of theories and views at this stage of pathological knowledge, then the author has done well in writing a book which he speaks of in the preface as "strictly elementary." We can say, with truth, that, so far as the author goes, he has done his work well; that is, he has expressed in a small space the views of Rindfleisch, Virchow, Billroth, Stricker and other modern pathologists: and, for a brief *résumé* of the views of these

writers, the introductory treatise of Dr. Green is a capital one. We feel, however, that Pathology is just now emerging from a period of uncertainty, and that it is making rapid strides toward the fixedness of definite knowledge, nearer toward the position of an exact science. As *general* text books in pathology we have the admirable works of the German scientists which we have mentioned, and we are confident that the entire ground cannot be properly covered in less space than they give to it. The multiplication of general treatises can add nothing to the value of the literature of pathology. The farther study of the subject can only be advanced by special investigations on special topics.

We would not underrate, however, the work of Dr. Green; for in what he has written, he has done well; we only express the opinion which every student of medicine must have forced on him, that the day has passed when he can gain a proper study of pathology from a meagre text book. S.

Medical and Surgical Journal.

BOSTON: THURSDAY, FEBRUARY 29, 1872.

MATHEMATICS AMONG THE FLAPS.

We are gratified to believe that science is still on the march. The following directions for amputating the leg are taken from an article of six quarto pages on this subject in the *Gazette Hebdomadaire de Médecine et de Chirurgie* of June 22, 1871, and will, we trust, be favorably received by our progressive friends here. We hasten to translate them.

"*Traumatic Surface.* I will suppose that the limb amputated is a cylinder consisting of a single bone surrounded by flesh, the arm for example, and that it has a radius of 5 centimetres.

"*a.* The circular amputation is performed, the skin being cut at a distance equal to a half of three times the radius, or 7·5 centimetres below the bone. After the retraction of the muscles, a funnel-shape is obtained, of not more than 5 cm. in depth, instead of 7·5 cm. The surface of this hollow cone, considering the osseous section as a point, is given by the formula πRl, in which l, the generator of the cone, $= \sqrt{R^2 + H^2}$, H being the length of the retracted skin measured from the level of the osseous section. $R = 5, R^2 = 25$. $H = 5$ approximately, hence $H^2 = 25$, and therefore $l = \sqrt{25 + 25} = \sqrt{50} = 7$. The surface of the cone, $\pi Rl = 3{\cdot}1416 \times 5 \times 7 = 110$ square centimetres.

"*b.* The amputation is made by two rounded flaps, of a length equal to 7.5 cm., reduced to 5 cm. after retraction. The two flaps have the cut surfaces of a semi-elliptical form equal to each other; the total surface is then an ellipse, whose smaller axis is the diameter of the limb = 10 cm., and the larger 14 cm., that is to say, twice 7, a figure which obtains for both flaps, as the generator of the cone l. The surface of the ellipse is given by the formula πAB; A and B representing the unequal demi-axes of the ellipse, that is 5 and 7, the total surface is $3{\cdot}1416 \times 5 \times 7 = 110$ square centimetres, the same as in the circular infundibuliform operation."

Now let the reader carefully observe the following significant difference in the single flap operation, and draw his own conclusions.

"*c.* With a single rounded flap of 15 cm. reduced by contraction to 10 cm., the whole traumatic surface comprehends two parts. 1st, a semicircle, transverse section of $\frac{1}{2}$ the cylinder, or $\frac{\pi R^2}{2} = \frac{3{\cdot}1416 \times 25}{2}$ = 39 square centimetres; 2d, a semi-ellipse, of which the short radius is 5 and the greater $= \sqrt{R^2 + H^2}$; here H = 10, whence $\sqrt{25 + 100}$, or 11, which gives by the formula $\frac{\pi AB}{2}$ the result

$$\frac{3{\cdot}1416 \times 5 \times 11}{2} = 86.$$

"To sum up, the bleeding surface measures 39 cm. + 86 cm. = 125 square centimetres."

All this is indeed as it should be. After the above calculations, there is supposed to be an interval of rest, during which an opportunity is afforded for these equations, which express feelings we have long stifled, to heal and make a stump; the stump of progressive science. It is plain that no sloughing, nor hospital gangrene, nor retraction of skin, nor necrosis of the bone is likely to occur with mathematical flaps; and yet is it wholly wise to ignore these frequent contingencies? Why not take them into the calculation in the characters of x and y for ex-

ample, and why not let a poultice = P, and carbolic acid appear in its natural character of $C^6 H^5 -O -H$, and so by interweaving and mixing a poultice with the mathematics, make this amputation still more complete? Every modern surgeon of pretension will of course carry the flap equations in his waistcoat pocket, and will recognize the importance of a blackboard in the operating theatre. For ourselves we are prepared to concede that the steadiness of an old-fashioned surgeon sinks to the level of a delirium tremens when compared with this extraction of a surgical square root upon the brink of an important operation, or in the bosom of an agonized family. Rival surgeons hurrying to a scene of disaster each with a complete amputating case under one arm, will in future be observed to carry a slate and pencil under the other; or better still, will ingeniously add a slate to the surreptitious spirit lamp, test-tube and bottles, urinometer, stethoscope and thermometer, lately contrived in England to be constantly carried in the crown of every true practitioner's hat.

SKETCH OF CHARLES A. LEE, M.D. *Messrs. Editors*,—My acquaintance with Dr. Charles A. Lee began in 1840, in the office of Dr. Horace Green, and at the "Medical Reunions" in the city of New York. He was at that time editing the *New York Journal of Medicine* and writing largely for various medical and scientific works. In 1848, he wrote to me inviting me to take the Chair of Surgery, in Geneva Medical College, New York, made vacant by the resignation of Prof. Frank Hamilton, who, with Prof. Austin Flint, left for Buffalo.

My colleagues were Profs. Lee, Sweetser, Coventry, Hadley, Sen., and Webster. This combination lasted until 1853, six sessions, during which time my intercourse with Prof. Lee, social and professional, was most pleasant and profitable. After this period, Prof. Lee lectured in many of the Northern and Eastern Medical Colleges, and was, at the time of his death, "Emeritus Professor of Materia Medica" in the Buffalo University. In truth, after his removal from New York city to Peekskill—what is not uncommon in New England—he became peripatetic, and was a professor in several medical schools at the same time. This practice made it necessary to do double duty in each school in order to gain time. In addition to a very laborious system of teaching, he did at each of the schools a large private practice, was consulted by the people from great distances, and physicians of the neighborhood brought to him their chronic cases in great numbers, to obtain the benefit of his experience. In the performance of these duties, he was strictly honorable towards his medical brethren, and just to his patients, observing the "regulations of the code" in its letter and spirit. Well-skilled in pharmacy, materia medica and pathology, his therapeutics was most successful.

He was eminently a peace-maker, and was frequently called in as umpire among the jarring elements of a Medical Faculty.

His investigations extended to almost all departments of science, but were especially directed to botany, materia medica, chemistry and the practice of medicine. He wrote a Monograph on the Botany of the State of New York. He could lecture on any one of the several branches usually taught in a medical school. His reasoning powers were chiefly those of comparison, while his perceptive faculties were large and active. He was a diligent student, and naturally industrious. In Religion he was a High Church Episcopalian, and performed assiduously and conscientiously the duties of a consistent Christian. He was a friend and advocate of the Temperance reformation.

He was not much of a public speaker, and seldom ventured on any rhetorical display; he read his lectures from manuscript, in a clear, conversational tone, while his gestures were few.

He was one of a committee of learned men, who investigated the spirit-rapping phenomena of the Fox girls, of Rochester, New York, whose report exposing that fallacy was transmitted to the French Academy of Sciences, inducing the appointment by that learned body of another committee. Curiously enough, he afterwards became a convert to the doctrine of spirit rappings, and felt very indignant with his friends, who would not believe as he did.

He, with his colleagues in Geneva, with the assistance of the class, were the first to open the doors of a regular Medical College for the admission of a lady student. Miss Elizabeth Blackwell went through the regular courses of lectures and examinations, and graduated with honor in that Institution. She has the names of all the Faculty on her diploma; she wrote a thesis on typhoid fever, drawn from cases observed by herself, in the Blockley Hospital, in Philadelphia; she also attended a private course of lectures on "Operative Surgery," together with a course of private dissecting, in the lecture and dissecting rooms of the writer. Her name and reputation are too well known to require farther comment.

Dr. Lee died on the 14th inst., at Salisbury, Conn., at the ripe age of 72. He graduated at Williams College, and studied medicine in New York city. Personally, he was above the medium height, with broad shoulders, long limbs, large head, covered with gray hair extending down low over the forehead, thick eyebrows, overhanging bright and benignant eyes, Roman nose, and a mouth expressive of sweetness, with a well-developed, curved chin. His walk was that of a student, his head inclined forward; his voice was clear and emphatic, and when he laughed, shrugged his shoulders in a peculiar way. JAMES BRYAN, M.D.

Elizabeth, N. J., Jan. 23, 1872.

Medical Miscellany.

City Hospital Appointments.—Dr. William Read has been elected one of the visiting physicians of the Boston City Hospital, to fill the vacancy occasioned by the resignation of Dr. A. D. Sinclair.

Dr. O. W. Doe has been appointed physician to out-patients, in place of Dr. Wm. B. Mackie, resigned.

The Alumni Association of the Jefferson Medical College proposes to hold a social reunion during the meeting of the American Medical Association in Philadelphia, in May next. The Alumni of the College are cordially invited to attend.

Those who expect to be present are requested to send their names and addresses to either of the secretaries, J. Erving Mears, M.D., 222 South 16th St., R. J. Dunglison, M.D., 636 North 18th Street.

During the examination before a committee of the Pennsylvania Legislature of the practice of selling medical diplomas by the "Philadelphia College," a negro swore that he had purchased a diploma for sixty dollars, although he had never attended a lecture. Another man, who had attended a few lectures, obtained a diploma after an examination so trivial in its nature that it disgusted even the aspiring "doctor" himself. But the most remarkable testimony was given by a witness who testified that he arranged with the faculty for the issue of a diploma for a child two years old, the professor, who knew nothing of the child's age, naming the sum and agreeing to date back the diploma four years.—*Exchange.*

Arterial Transfusion of Blood is recommended by Prof. Hueter, in the *Centralblatt*, in preference to its introduction by the veins; two reasons being that the introduction of air into the heart and pulmonary circulation is thereby prevented, any air admitted being absorbed in the passage of the blood through the capillaries; and that a larger quantity can be in this manner introduced without risking over-distention of the heart. The introduction of such small quantities as two, three, or four ounces, he regards as useless—in most instances from eight ounces to a pound being requisite. He has tried the plan with success in three cases, where it was used to remove the symptoms accompanying intense septicæmia.—*N. Y. Med. Record.*

Chloride of Potassium.—Dr. Lander has substituted the chloride for the bromide of potassium in the treatment of epileptics with a success which he declares to be identical. He begins with smaller doses; but doses of 75 to 105 grains daily have been borne without inconvenience for months in succession. He states that it is more active, one-sixth of the price, and without the inconvenient secondary effects of bromide of potassium. He believes that, in the stomach, bromide is converted into chloride of potassium; and that, for many reasons, it is desirable to administer it at once in that form.—*Philadelphia Med. and Surg. Reporter.*

Dr. John Byrn has been appointed Professor of Gynæcology in the Long Island College Hospital.

Harvard University Medical Graduates.—The list of Graduates published in the Journal last week was printed as received by us. Several of the names were incorrectly spelled—a corrected list of which follows:—

Chase, Julian Augustine.	Harris, Francis Augustine.
Cockburn, John Cassilis.	King, Stephen Henry.
Couch, John Francis.	Seymour, James Dwight.
Cutler, William Bullard.	Wier, James.
Ginn, David Richard.	

Notice.—The Publishers find it necessary to request subscribers in making their remittances not to send checks except on banks in the large cities. Those on country banks are collected at comparatively great expense, and sometimes with much difficulty.

Pamphlets Received.—The Question of Quarantine: The Nature and Prevention of Communicable Zymotic Diseases. By Alfred L. Carroll, M.D., New York. Pp. 21.—Transactions of the Medical Society of the State of California, during the years 1870 and 1871. Pp. 253.—Detection of Pulmonary Elastic Tissue in the Sputum of Phthisis. By Joseph G. Richardson, M.D., Microscopist to the Pennsylvania Hospital. Pp. 8.

Deaths in nineteen Cities and Towns of Massachusetts for the week ending Feb. 24, 1872.

Cities and Towns.	*No. of Deaths.*
Boston	100
Charlestown	8
Worcester	16
Lowell	21
Milford	3
Chelsea	5
Cambridge	22
Salem	12
Lawrence	9
Springfield	5
Lynn	12
Gloucester	5
Fitchburg	5
Taunton	5
Newburyport	4
Somerville	8
Fall River	15
Haverhill	2
Holyoke	5
	262

Prevalent Diseases.	
Consumption	43
Pneumonia	41
Scarlet fever	10
Typhoid Fever	9
Croup and Diphtheria	8
Measles	7

Boston reports three deaths from smallpox.

George Derby, M.D.,
Secretary of State Board of Health.

Deaths in Boston for the week ending Saturday, Feb. 24th, 100. Males, 37; females, 63. Abscess, 1—apoplexy, 4—asthma, 1—inflammation of the bowels, 1—bronchitis, 3—inflammation of the brain, 1—disease of the brain, 2—canker, 1—cholera infantum, 2—cyanosis, 1—consumption, 21—convulsions, 2—debility, 1—diarrhœa, 2—dropsy, 1—dropsy of the brain, 2—epilepsy, 1—erysipelas, 2—scarlet fever, 3—typhoid fever, 4—disease of the heart, 7—hernia, 1—intemperance, 2—disease of the liver, 3—congestion of the lungs, 4—inflammation of the lungs, 6—marasmus, 3—measles, 2—old age, 3—paralysis, 1—puerperal disease, 1—pyæmia, 1—smallpox, 3—disease of the spine, 1—suicide, 1—whooping cough, 2—unknown, 3.

Under 5 years of age, 34—between 5 and 20 years, 8—between 20 and 40 years, 24—between 40 and 60 years, 20—above 60 years, 14. Born in the United States, 60—Ireland, 32—other places, 8.